Title
Scaling up diagnostic-driven management of sexually transmitted infections in pregnancy.

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Scaling up diagnostic driven management of sexually transmitted infections in pregnancy

Curable sexually transmitted infections (STIs), for example *Chlamydia trachomatis* and *Neisseria gonorrhoeae*, are common worldwide[1] and can have severe consequences for women and, when occurring in pregnancy, their children.[2] WHO recommends a syndromic approach to STIs in low resource settings where laboratory services are scarce, but this approach lacks sensitivity and specificity, missing many infections and causing overtreatment.

An Article by Marijn C Verwijs and colleagues[3] found that incorporating point-of-care (POC) STI testing with GeneXpert into case-finding and infection management improved identification of true infections and prevented overtreatment among women in Kigali, Rwanda. Similar results have been found for Botswana.[4] In their Comment on Verwijs and colleagues' study,[3] Rosanna Wai Wan Peeling and David Mabey[5] stated that POC tests have the potential to revolutionise STI management, but that the high costs of available tests might limit widespread scale-up in the high burden, low-resource settings where they are needed most.

We agree that development of lower-cost diagnostics should be prioritised and, in the meantime, suggest that implementation research be used to identify approaches for expanding access to STI testing. We developed a decision model to estimate the 1-year costs and outcomes associated with different strategies for scaling-up C trachomatis and N gonorrhoeae testing for pregnant women in Botswana.4 We compared syndromic management with three POC strategies: GeneXpert-based POC testing at all hospitals and clinics providing antenatal care, GeneXpert testing at regional hospitals to analyse samples from multiple facilities, and a hub-and-spoke model whereby high volume sites conduct POC testing and serve as hubs for samples collected from other sites in their areas. Our results suggest that the strategy of POC testing at every antenatal care facility was the most expensive because of large capital costs and might be unaffordable for low-income countries.[4] Although syndromic management was the least expensive strategy, it resulted in fewer infections cured and considerable overtreatment. Among testing strategies, we found that the hub-and-spoke approach would offer the optimal cost per infection averted.

Modelling analyses that incorporate system dynamics—ie, patient volume, disease burden, infrastructure, and budget effects—could inform plans to scale-up testing to improve STI management globally. Our analysis suggests strategies for reducing costs and maximising impact by strategically situating POC testing. There are additional opportunities for cost reductions, such as integrating testing into antenatal care services, maximising multiplex capacity, and using existing but underused resources, such as the GeneXpert Mycobacterium tuberculosis testing network, which could reduce capital costs and have important clinical and public health benefits.

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